



# Mine Safety Legislation

Australia • Canada • People's Republic of China  
South Africa

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**MINE SAFETY LEGISLATION**  
**Table of Contents**

**COUNTRY REPORTS**

**COMPARATIVE SUMMARY** *Stephen Clarke* ..... **1**

**AUSTRALIA** *Donald DeGlopper* ..... **3**

**CANADA** *Stephen Clarke* ..... **9**

**CHINA** *Rei Wei* ..... **15**

**SOUTH AFRICA** *Ruth Levush* ..... **19**

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**MINE SAFETY LEGISLATION**  
**COMPARATIVE SUMMARY**

Australia, Canada, China, and South Africa are all major mining countries that have experienced tragedies in which miners have been killed. Current fatality rates for these countries are difficult to obtain and compare, but they appear to be low in Australia and Canada and extremely high in China. It has been reported that Chinese officials acknowledge that approximately six thousand miners were killed in 2004 and that non-governmental groups contend that the number is far higher. A particular problem in that country is the existence of illegal mines. South Africa reported 424 deaths in 1998 and 313 in 1999. In both China and South Africa, fatalities appear to be decreasing. In Australia, the number of annual deaths in coal mines generally has ranged from zero to four over the past forty years, but it stood at twenty-four in 1972 and eleven in 1994. Canada's federal government does not publish national mine fatality statistics. It has been reported that in the major mining province of British Columbia, there were approximately twenty-eight fatalities between 1978 and 1998.

Industrial fatalities often lead to legislative reforms, and Australia, Canada, China, and South Africa all have laws and regulations of relatively recent origin that result from this type of event. In Australia, where mining is primarily governed by state law, Queensland enacted a new Coal Mining Safety and Health Act in 1999 and New South Wales enacted a Coal Mine Health and Safety Act in 2002. In Canada, where mining is primarily governed by provincial law, there has been a trend of replacing laws aimed specifically at coal mining with general occupational health and safety legislation that incorporates special rules for underground mines and the coal industry. Nova Scotia adopted new Underground Mining Regulations in 2003 and Alberta enacted a new Occupational Health and Safety Code in the same year. South Africa created a Mine Health and Safety Act in 1996 and enacted regulations under it in 2002. In China, the Law of Mines Safety was promulgated in 1993 and its implementing regulations were promulgated in 1996. Thus, all of these countries' governments or legislatures have addressed mine safety through major reforms within the past ten years. There also have been changes in the administration of the relevant laws. For example, China established its Ministry of Land and Resources in 1998.

Two common features of the surveyed countries' new laws are that they provide for greater employee participation in preventing accidents and increase the powers of inspectors. As for employee participation, the applicable law in South Africa requires the appointment of health and safety representatives for every shift and the creation of safety committees. In Nova Scotia, employees have a right, after consulting with their health and safety committee, to have tests for dangerous gases conducted at their own expense. As for inspections, Nova Scotia and South Africa allow inspectors to conduct unscheduled examinations. Queensland authorizes inspectors to obtain warrants to enter mines. China does not have any rules on routine mine inspections, but does have a fairly detailed act establishing safety standards. The major problem in China appears to be that these rules are not enforced in private mines.

Queensland requires mines to provide mine rescue services through mutual assistance agreements with other mines or through an accredited corporation. Queensland has a rescue service that is funded by the industry. New South Wales also has a private rescue company in the form of the Coal Services Pty Limited (CSPL).

Queensland, New South Wales, South Africa, and Alberta all require miners to be issued “self-rescuers” equipment that meet standards established by government authorities. Nova Scotia generally requires self-rescuers to hold up to sixty minutes of oxygen, but there are higher standards for miners stationed more than thirty minutes by foot from an exit. The Canadian practice of establishing refuge stations in mines has attracted international interest. In that country, refuge stations are required by law or as a condition for obtaining approval to operate a mine. Minimum safety standards often are exceeded by mine operators to increase worker safety. Seventy-two trapped miners recently were rescued in Saskatchewan after they had found safety in a refuge station.

Prepared by Stephen F. Clarke  
Senior Foreign Law Specialist  
March 2006

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## AUSTRALIA

## MINE SAFETY LEGISLATION

*Executive Summary*

*In Australia, safety in coal mining is regulated primarily by the legislation of state governments, rather than the federal (Commonwealth) government. Because the coal industry is concentrated in the two states of Queensland and New South Wales, their legislation and regulatory regimes are examined. The legislation stresses the clear allocation of responsibility for various aspects of mine safety and requires all mines to have comprehensive safety plans, training for mine workers, and a percentage of workers certified in mine rescue skills.*

**I. The Australian Coal Industry**

Australia is the world's largest exporter of black coal. In 2003, exports totaled more than 216 million metric tons. Production for coal export markets is done in the two eastern states of Queensland and New South Wales. (Brown coal is mined in the southern state of Victoria, but this is used exclusively by the power-generating industry in that state.) The coal industry has over one hundred privately-owned coalmines (both surface and underground) and employs over 21,000 people. Many, perhaps a majority, of the mines are owned by multinational corporations. The major overseas markets for Australian coal are Japan and other Asian economies. Most coal producers are heavily dependent on export markets, and about seventy-eight percent of all black coal is exported.<sup>1</sup> In 1997, coal was Australia's highest value export, making up eight percent of the total of all goods and services exported.<sup>2</sup>

**II. Occupational Health and Safety Legislation**

Australia is a federation of six states and two territories, which, along with the federal (Commonwealth) government, results in nine jurisdictions, legislatures, court systems and bodies of legislation and regulation. Both states and the Commonwealth have responsibilities for occupational health and safety, although most of the relevant legislation is from state legislatures.<sup>3</sup> The major Commonwealth legislation, the Occupational Health and Safety (Commonwealth Employment) Act 1991, actually applies only to employees of the Commonwealth government itself.<sup>4</sup> The Commonwealth National Occupational Health and Safety Commission devotes much of its efforts to coordinating action by the states and territories and promoting the adoption of consistent, Australia-wide standards and codes of practice.<sup>5</sup> It has no power, however, to compel state or territory governments to adopt any regulations

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<sup>1</sup> DEP'T OF INDUSTRY, TOURISM AND RESOURCES, RESOURCES DEVELOPMENT BRANCH, AUSTRALIAN GOV'T ,AUSTRALIA'S EXPORT COAL INDUSTRY (7th ed. 2005), [http://www.industry.gov.au/coal\\_export](http://www.industry.gov.au/coal_export).

<sup>2</sup> Bruce Robertson, *Practical Coal Mining: From Seam to Market* 343, in AUSTRALIAN MINING AND PETROLEUM LAW ASSOCIATION YEARBOOK (1997).

<sup>3</sup> Adrian Brooks, *Occupational Health and Safety* 10 (Title 26.8), in THE LAWS OF AUSTRALIA (1998).

<sup>4</sup> Occupational Health and Safety (Commonwealth Employment) Act 1991, No. 30 1991, as amended through Act 35 of 2005. The text of the law is available on ComLaw, the database of the Federal Attorney General's Department at <http://www.comlaw.gov.au/>.

<sup>5</sup> NAT'L OCCUPATIONAL HEALTH AND SAFETY COMM'N, AUSTRALIAN GOV't <http://www.nohsc.gov.au/>.

or standards. Primary responsibility for occupational health and safety thus remains in the hands of state and territory governments.

Most of the various state and territory laws currently in force were enacted in the 1980s and the early 1990s and were inspired by British reforms. They follow many of the provisions of the United Kingdom's Health and Safety at Work Act 1974.<sup>6</sup> All the laws set out in broad terms the general duties of all parties, including workers, who have responsibility for preventing work-related injury and disease. Inspectors are empowered to issue improvement and prohibition orders, failure to comply with which is an offense.<sup>7</sup> Several jurisdictions permit inspectors to issue what amount to on-the-spot fines, usually for fairly small sums. The most controversial aspect of the laws has been their provision for joint worker-management health and safety committees or for worker representatives with the power to order provisional improvement notices or even to order that work cease.<sup>8</sup>

### III. Mine Safety Legislation

In addition to the occupational safety regime created by common law and statutory provisions, the states of New South Wales and Queensland have special legislation on coalmines and their safety. The stimulus for passage of such laws often has been a major mine disaster with significant loss of life. Common features of the laws are efforts to specify the responsibilities for safety that go along with various positions, such as the Mine Operator, the Chief Inspector, and the Manager for Mining Engineering. The laws also commonly spell out responsibilities for record-keeping, the powers of safety and health representatives, and the powers of inspectors.

#### A. Queensland

Queensland is the site of the Moura Mine, where methane gas explosions killed twelve miners in 1985 and eleven in 1994. After the 1994 event, the Queensland Government carried out a major review of mining safety and introduced new legislation to implement the recommendations of its inquiry.<sup>9</sup> Current legislation includes the Coal Mining Safety and Health Act 1999 and the associated Coal Mining Safety and Health Regulation 2001.<sup>10</sup> These are both lengthy and detailed texts, with the Act comprising 166 pages and the Regulations 247 pages. The Act sets out the obligations of persons generally (Sec. 39) and goes on to state the obligations of a range of specific persons, such as the site senior executive for a coalmine; contractors; manufacturers, and importers and suppliers of substances for use at coalmines (Secs. 40-47). It requires all mines to have a safety and health management system and a principal hazard management plan.

As provided for by the general Occupational Health and Safety legislation and the Act, miners are to elect site safety and health representatives (Secs. 93-107). The representative has the power to enter any area of the mine at any time to look for possible health and safety risks, as well as to examine any

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<sup>6</sup> BROOKS, *supra* note 3, at 59-63.

<sup>7</sup> RICHARD JOHNSTONE, OCCUPATIONAL HEALTH AND SAFETY LAW AND POLICY 373-391 (2d ed. 2004).

<sup>8</sup> *Id.* 486-530.

<sup>9</sup> Shelly Banks, *Positive Developments in Mine Safety: Post-Moura Mine Disaster*, THE QUEENSLAND GOVERNMENT MINING JOURNAL (Sept. 2004), [http://www.nrm.qld.gov.au/mines/publications/qgmj/2004/sep/article\\_59.pdf](http://www.nrm.qld.gov.au/mines/publications/qgmj/2004/sep/article_59.pdf).

<sup>10</sup> Updated texts of both the Act and the Regulations are available from the Office of the Queensland Parliamentary Counsel at <http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/C/CoalMinSHA99.pdf> or <http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/C/CoalMinSHR01.pdf>. They also may be had from the Australasian Legal Information Institute site at <http://www.austlii.edu.au/>.

documents relevant to safety and health that are held by the site senior executive. The representative is expected to cooperate with the mine's management and keep the management informed of his activities and findings. A representative who is not satisfied that the site senior executive is taking the action necessary to make the safety and health management system adequate and effective must advise an inspector. The inspector, a member of the staff of the State Government's Mines Inspectorate (discussed below) must investigate the matter and report the results in the mine record (Sec. 99). The representative may, by a written report to the site senior executive that states the reasons, order the suspension of coal mining operations. If the representative reasonably believes there is immediate danger to mine workers, the representative may stop the operations (Sec. 101). The representative must provide a written report to the site senior executive, giving the reasons for the action, and the executive must not restart mining operations until the risk to the miners is at an acceptable level. A representative must not unnecessarily impede operations of a mine, with a fine of two hundred penalty units (an inflation-adjusted monetary sum) for such action. If the Minister (for Natural Resources, Mines and Water) considers a representative to not be performing their functions satisfactorily, the Minister may remove the representative from office (Sec. 97).

The Mines Inspectorate is an agency of the Queensland Government.<sup>11</sup> Its responsibility is to ensure that acceptable safety and health standards are practiced in the mining and quarrying industries. The powers of inspectors and inspection officers are set out in Part 9 (Secs. 125-181) of the Coal Mining Health and Safety Act. Inspectors have the power to enter mines with the consent of the mine operator or they may obtain warrants from a magistrate that will authorize entry (Secs. 133-138). It is an offense, punishable by a fine, for any person in a mine to refuse to help an inspector or to answer an inspector's questions (Secs. 139-142). Inspectors may seize things that they consider evidence of failure to comply with the Act. They may demand the production of documents and may require persons to meet with them to answer questions (Secs. 152-159). Inspectors have the power to stop operations of a mine or the use of certain pieces of equipment. Inspectors also may issue "directives" in writing or orally to the mine operator, which include such matters as ensuring that miners are competent for their tasks, that tests be made for hazardous conditions, that specified risks be reduced, and so forth (Secs 161-178).

Queensland's Coal Mining Safety and Health Regulation 2001 includes an extensive set of regulations on emergencies.<sup>12</sup> The topics listed in Part 3 of the Regulation are: fire prevention and control; entry airlocks and mine sealing; rescue and communication; breathing apparatus; cap lamps; escape and emergency evacuation; mines rescue; and communications systems. As an example, regulations 158-160 require that no person may enter an underground mine without a self-rescuer (a type of breathing apparatus) and previous training in the use of the apparatus. Regulation 173 requires that the senior site executive must ensure that an underground mine has either five workers or five percent of its workers (whichever is greater) certified as competent in using self-contained breathing apparatuses and emergency rescue procedures. Every mine must have an emergency response strategy for mine rescue services, which provides for either mutual assistance with other mines or a mines rescue agreement with "an accredited corporation."

The Act requires that each mine operator provide a mines rescue capability for that mine. It also provides for the accreditation of corporations to help provide such a capability (Sec. 219). All mine operators must be a party to a mines rescue agreement and can be required to contribute to the accredited corporation (Secs. 223-225). The phrase "accredited corporation" appears to be a reference to the

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<sup>11</sup> Queensland Government, *About the Mines Inspectorate*, <http://www.nrm.qld.gov.au/mines/inspectorate/about.htm>.

<sup>12</sup> Queensland Government, *Coal Mining Safety and Health Regulation 2001*, <http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/C/CoalMinSHR01.pdf>.



Queensland Mines Rescue Service (often referred to by the acronym QMRS). The QMRS is a private corporation, funded by contributions from and contracts with mine enterprises, which focuses on training in mine safety and rescue.<sup>13</sup> In 1998, the Queensland government replaced the former mines rescue brigades, which had been funded by the coal companies (one third) and the state government (two thirds), with a private company funded and operated by the mining industry.<sup>14</sup> The Service maintains rescue stations at or near mines and uses miners who have been trained and certified and who normally work within a mine but may act, in an emergency, as volunteer fire and rescue personnel. Presumably, in the event of an emergency at a mine, the first responders would be those miners who had been trained and certified by the QMRS, with additional assistance, as needed, by personnel from the rescue station and certified rescue personnel called in from other mines in the vicinity. The Service sponsors annual competitions in rescue exercises between teams representing different mines, and much news coverage stresses the Service's technical expertise.<sup>15</sup>

## B New South Wales

The primary legislation on coalmine safety in New South Wales is the Coal Mine Health and Safety Act 2002 and the Coal Mines (Underground) Regulation 1999.<sup>16</sup> In their overall provisions, they are similar to Queensland's legislation. The Regulation 1999 focuses largely on inspection and on equipment, such as ventilation systems, fireproof doors, escape equipment, and egress plans. It also mandates the appointment of fire officers and the establishment of fire brigades. The Act 2002 spells out the duties and responsibilities of managers and employees, the establishment of a hazard management plan, and oversight of coal operations by inspectors, who may be employees of the New South Wales government or employees of the mine who are elected by their fellows or appointed by the miners' union. The Coal Mines Amendment Regulation 2003 extends the definition of the term inspector and amends the Coal Mines (Underground) Regulation 1999 to comply with the International Labor Organization Convention 138 to restrict the employment of persons under the age of sixteen, prohibiting the hiring of minor miners.<sup>17</sup>

The New South Wales legislation is subordinated somewhat more explicitly to the state's Occupational Health and Safety Act than the Queensland legislation, with notes to the 2002 Act repeating the points that the Occupational Health and Safety Act 2000 is the main Act and the Coal Mine Act imposes additional protections, rights, and obligations because of the special risks associated with coal mining. Recent legislation updates from the state government's Mine Safety Operations office refer to amendments to the Occupational Health and Safety Act 2000 and point out that they apply to all workplaces including mines.<sup>18</sup>

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<sup>13</sup> No comprehensive account of this organization has been found. Some information is available at its web site at <http://www.qmrs.com.au/>.

<sup>14</sup> Queensland Mines Rescue Service – History, <http://www.qmrs.com.au/public/about/history.asp>.

<sup>15</sup> *QLD Safety One of World's Best*, MINEBOX, December 4, 2003, <http://www.minebox.com/news.asp?NID=698>.

<sup>16</sup> New South Wales Acts and Regulations are available either from the New South Wales Parliamentary Counsel's Office at <http://www.legislation.nsw.gov.au/> or from the Australasian legal Information Institute at <http://www.aistlii.edu.au/>.

<sup>17</sup> Government of New South Wales, Coal Mines Amendment Regulation 2003 (2003 No. 450), [http://www.minerals.nsw.gov.au/data/page/1696/coal\\_mines\\_amendment\\_regulation\\_2003.pdf](http://www.minerals.nsw.gov.au/data/page/1696/coal_mines_amendment_regulation_2003.pdf).

<sup>18</sup> DEP'T OF PRIMARY INDUSTRIES, GOV'T OF NEW SOUTH WALES NOTIFICATION OF UPDATES TO LEGISLATION ADMINISTERED BY THE DEP'T OF PRIMARY INDUSTRIES, MINERAL RESOURCES, No. 4/2004, and No. 1, 2005, <http://www.minerals.nsw.gov.au/legislation/updates>.

On June 15, 2005, the provisions of the Occupational Health and Safety Amendment (Workplace Deaths) Act 2005 went into force.<sup>19</sup> These make it an offense for a person who owes a duty of care to engage in reckless conduct that causes a death at a workplace. The new provisions are aimed at a small minority of “rogues” whose indifference to health and safety at the workplace results in death. Their main effect is to provide higher penalties for such conduct. The amendment inserted a new Part 2A into the Occupational Health and Safety Act 2000, which made the maximum penalty for an offense 15,000 penalty units for a corporation, and 1,500 penalty units, a five-year imprisonment, or both these penalties, for an individual. Currently the value of a penalty unit is A\$110 (about US\$79), so that the fine for a corporation would be A\$1,650,000 (about US\$1,183,050), and A\$165,000 (about US\$118,305) for an individual.

In New South Wales, training in mine safety and mine rescue is the responsibility of a private company called Coal Services Pty Limited (CSPL).<sup>20</sup> This was formed on January 1, 2002, under the provisions of the New South Wales Coal Industry Act 2001. It merged the activities of the former Joint Coal Board and the Mines Rescue Board into a comprehensive organization responsible for providing workers’ compensation, occupational health and rehabilitation, and mines rescue services to the state’s coal industry. The company is jointly owned by the NSW Minerals Council (a mining companies’ organization) and the Construction, Forestry, Mining and Energy Union (CFMEU). It has two wholly-owned subsidiary companies – Coal Mines Insurance Pty Ltd and Mines Rescue Pty Ltd. The primary activity of Mines Rescue appears to be training. As with the QMRS for Queensland, each mine is to have a number of miners who have been trained in mine rescue and comprise the Rescue Brigade.<sup>21</sup>

#### IV. Mine Safety Issues

It is difficult to compile comprehensive and current statistics on death and injury rates in the Australian coal industry. This situation stems in part from the different recording systems used by different jurisdictions and in part from the aggregation of deaths and injuries in the coal industry into larger categories such as Primary Industry or Mining or Minerals.<sup>22</sup> Other problems stem from the difficulty of estimating the numbers of deaths and injuries from occupational disease, which may have a long latency period. The general consensus, as expressed for example in the Australian National Occupational Health and Safety Commission’s COMPENDIUM OF WORKER’S COMPENSATION STATISTICS AUSTRALIA, is that death and injury rates have declined since 1990.<sup>23</sup> The Queensland Government’s Safety and Health Office, Bureau of Mining and Petroleum has published FATALITIES IN THE QUEENSLAND COAL MINING INDUSTRY 1882-2004.<sup>24</sup> This publication gives a cumulative total of 422 deaths for the period. It covers both underground mines and surface mines. It also lists the numbers of persons employed in coal mining in the state in each year, so that a fatality rate could be calculated. The absolute number of deaths peaked in 1921 at seventy-seven, with further peaks at twenty-four in 1972, eighteen in 1975, fourteen in 1986, and eleven in 1994. For most years since 1960, the number of deaths

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<sup>19</sup> *Id.* Legislation Update No. 1/2005 – Workplace Deaths Legislation.

<sup>20</sup> Coal Services Pty Limited – About Us, <http://www.coalservices.com.au/about.php3>.

<sup>21</sup> COAL SERVICES PTY LIMITED, ANNUAL REPORT 2002-2003, [http://www.coalservices.com.au/images/db\\_images/publications/Annual%Report%202002-03.pdf](http://www.coalservices.com.au/images/db_images/publications/Annual%Report%202002-03.pdf).

<sup>22</sup> PARLIAMENTARY LIBRARY, PARLIAMENT OF AUSTRALIA, RESEARCH BRIEF NO. 7, 2004-2005, WORKPLACE DEATH AND SERIOUS INJURY: A SNAPSHOT OF LEGISLATIVE DEVELOPMENTS IN AUSTRALIA AND OVERSEAS 3-6 (2004).

<sup>23</sup> *Id.* pp. 3-4.

<sup>24</sup> DEP’T OF NATURAL RESOURCES AND MINES, QUEENSLAND GOV’T FATALITIES IN THE QUEENSLAND COAL MINING INDUSTRY 1882 – 2004, <http://www.nrm.qld.gov.au/mines/publications/pdf/fatals/pdf>.

has ranged from zero to four. The number of persons employed has increased from 7,207 in 1980 to 15,271 in 2003-2004, while the number of deaths was two in 1997, zero in 1998, two in 1999-2000, one in 2001-2002, one in 2002-2003, and zero through 2004. The numbers thus indicate a declining death rate in the industry.

Overall assessments of the safety record of the Australian coal mining industry differ, depending on the position within the system of those making the assessment. Representatives of state governments and industry associations tend to cite declining death rates and attribute improvements in safety to their legislation, policies, and practices. In December 2003, the then Queensland Mines Minister, Stephan Robertson, claimed that “the Queensland mining industry has one of the best mine safety records in the world, thanks to the work of its training body, the Queensland Mines Rescue Service.”<sup>25</sup> Representatives of the miners’ union tend to highlight shortcomings and what they see as failures by managers to comply with legislation and failures by state governments to enforce provisions of legislation. In 2003, a Queensland Member of Parliament representing a coal-mining district, himself a former miner, threatened to resign from the Labor Party if his concerns over the performance of the Rescue Service were not addressed by the state government. He claimed that experienced members of the Service were being forced to resign by managers more concerned with cost-cutting than the safety of miners. “The management has changed its focus from supporting an efficient and effective mines rescue service to a corporate focus. They’re arguing about what side they are going to put their emblem on new colored shirt.”<sup>26</sup>

In December 2004 and August 2005 the Construction, Forestry, Mining and Energy Union identified a number of issues in its submissions to the New South Wales government’s reviews of mine safety and the Occupational Health and Safety Act.<sup>27</sup> It did not mention death rates, but focused on the coal industry’s injury rates, which remain much higher than those of other industries. A 1997 policy paper of the union drew attention to the growing disparity between the management structures assumed in the legislation and the pervasive restructuring by mine owners (sometimes major multinational corporations) which served to diffuse responsibility for health and safety issues.<sup>28</sup> Other points made in the submissions were the increased use of contract employees –often short-term workers hired directly by a subcontractor to – who were not trained in safety procedures, and the perceived reluctance of the state government to enforce the provisions of the legislation and initiate prosecutions of mine managers. Union President, Tony Maher, said in November 2003 that one of the biggest problems was that the people making the decisions on prosecuting companies were themselves mine managers. “It’s like having the fox in charge of the chook house.”<sup>29</sup>

Prepared by Donald R. DeGlopper  
Senior Legal Research Analyst  
March 2006

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<sup>25</sup> *QLD Safety One of World’s Best*, Dec. 4, 2003, <http://www.minebox.com/news.asp?NID=698>.

<sup>26</sup> *Labor MP Threatens to Quit Over Mine Safety*, GREEN LEFT NEWS, Aug. 6, 2003, <http://www.greenleft.org.au/back/2003/548/548p4b.htm>.

<sup>27</sup> MINING AND ENERGY DIVISION, CONSTRUCTION, FORESTRY, MINING AND ENERGY UNION (CFMEU), SUBMISSION TO THE NSW REVIEW OF MINE SAFETY, [http://www.cfmeu.asn.au/mining-energy/policy/ohs/NSW\\_safetyreview/National/Sub.pdf](http://www.cfmeu.asn.au/mining-energy/policy/ohs/NSW_safetyreview/National/Sub.pdf); *Submission to Review of the NW Occupational Health and Safety Act 2000*, [http://www.cfmeu.asn.au/mining\\_energy/policy/ohs/ReviewNSW\\_OHSsub.pdf](http://www.cfmeu.asn.au/mining_energy/policy/ohs/ReviewNSW_OHSsub.pdf).

<sup>28</sup> CFMEU, POLICY PAPER, THE UNION PERSPECTIVE – ARE WE SERIOUS ABOUT MINE SAFETY? (1997), [http://www.cfmeu.asn.au/mining\\_energy/policy/ohs/OHS1.hrml](http://www.cfmeu.asn.au/mining_energy/policy/ohs/OHS1.hrml).

<sup>29</sup> Media Release, CFMEU Commission Convenes Tripartite Conference on Coal Safety Crisis, Nov. 25, 2003, <http://www.cfmeu.asn.au/mining-energy/media/media2003/med309.html>.

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**CANADA**

**MINING SAFETY LEGISLATION**

*Executive Summary*

*In Canada, most mines that are not located in the Northwest Territories fall under provincial jurisdiction. Most of the provinces have moved from regulating coalmine safety through special laws and regulations aimed at that industry to general occupational health and safety laws, which now incorporate some special rules for coalmines. Nova Scotia's regulations are relatively detailed with respect to such matters as refuge stations, self-rescuers, communications, ventilation, and dusting. Alberta's regulations rely more on the approval process to establish high standards. The federal government has a Coal Mine Safety Commission established under the Canada Labour Code. However, little of the coal mining that currently is being conducted in Canada falls under federal jurisdiction.*

**I. Introduction**

Coal is estimated to compose approximately sixty-seven percent of Canada's fossil fuel reserves and its annual production is valued at approximately Can\$1.6 billion.<sup>1</sup> However, approximately ninety-five percent of Canada's coal comes from open-pit mines in the western provinces of British Columbia, Alberta, and Saskatchewan. Significant coal reserves also exist in the Yukon and Northwest Territories, but at the present time, only two underground coalmines are operating in the country. One of these mines is in British Columbia and the other is in Alberta. At one time, the largest sources of coal in Canada were the underground mines in the Sydney region of Cape Breton Island at the northern tip of Nova Scotia. Because the coal in this region is deep underground or under the adjacent offshore, these mines were expensive to operate and they eventually were closed. However, plans to reopen one of the underground coalmines in Cape Breton have been moving forward in the past year.<sup>2</sup> The Government of Nova Scotia would welcome the economic stimulus this venture would provide to a region that traditionally has suffered from high unemployment, but it also remembers the Westray Mine disaster that killed twenty-nine trapped miners in 1992.

The Westray Mine, located on the mainland in Nova Scotia's Pictou County, received large loans and guarantees from the federal and provincial government before it opened in 1991. Despite the fact that it was supposed to have had the most advanced safety equipment and the latest technology, trapped methane gas caused a fatal explosion. A subsequent public inquiry found that the particular seam that was being mined contained so much flammable gas that it was an "adverse environment" and

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<sup>1</sup> NATURAL RESOURCES CANADA, THE IMPORTANCE OF MINING TO THE CANADIAN ECONOMY (2006), [http://www.nrcan.gc.ca/mms/pdf/econo06\\_e.pdf](http://www.nrcan.gc.ca/mms/pdf/econo06_e.pdf) (last visited Mar. 24, 2006).

<sup>2</sup> Jeff Collins, *CAC Director Interview by CBC*, Coalblog, Jan. 12, 2006, <http://www.coal.ca/blog/>.

that the economic viability of the project should have been questioned by the federal and provincial governments from the very beginning.<sup>3</sup>

Although Canada currently has only two underground coalmines, underground mining of the many other substances that contribute approximately Can\$25 billion a year to the Canadian economy is still common. Most of the mining for various metals that contribute approximately Can\$12.5 billion a year to the Canadian economy occurs in underground mines. For gold alone, there are approximately twenty-five underground mines.<sup>4</sup> The largest of these mines are in Ontario. Two of Canada's major uranium mines also are underground.<sup>5</sup> They are extremely large facilities that are primarily responsible for making Canada the world's largest producer of uranium. Mining for the non-metals that contribute approximately Can\$10 billion a year to the Canadian economy, mostly occurs in open-pit mines, but there are some exceptions. Canada also is the world's largest producer of potash and most its potash mines are underground mines. In an incident that recently received international attention, one of these operations located in the province of Saskatchewan had a fire that trapped seventy-two miners underground for approximately thirty hours. The miners were able to retreat to a refuge station in the Mosaic mine before they were rescued. There were no fatalities in this incident which occurred near the town of Esterhazy and the safety procedures that were in place in the Mosaic mine have drawn widespread interest. It has been reported that, in addition to Chinese officials, Davitt McAlteer, a U.S. mine safety expert investigating the Sago Mine disaster in West Virginia, also is expected to tour the Mosaic mine in the near future.<sup>6</sup>

## II. Mining Legislation and Regulations

Mining and occupational health and safety are two matters that generally fall under provincial jurisdiction in Canada. One exception to this rule concerns uranium. The federal government claimed jurisdiction over uranium in 1946 and uranium production now falls under the federal Atomic Energy Control Act.<sup>7</sup> The federal government also has constitutional jurisdiction over federal and territorial lands and resources in the seabed of the territorial sea. Canada's three territories are the Yukon, Nunavut, and the Northwest Territories. The Yukon has its own mine safety laws, but the Northwest Territories rely upon the standards and requirements in the Canada Labour Code. Despite its title, which suggests that it is of national application, this law does not establish minimal national safety standards and requirements that can be exceeded or supplemented by the provinces or territories. The applicable provincial laws establish all of the safety standards and requirements that mines under their jurisdiction must meet regardless of what rules are contained in the Canada Labour Code. Nevertheless, many of the latter's provisions have been incorporated in applicable provincial laws.

Although little coal now is being recovered in mines under federal jurisdiction, the Canada Labour Code does establish a Coal Mine Safety Commission and requires employers to comply with

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<sup>3</sup> *Westray Coal Mine Disaster*, Westray Coal Mine Disaster Index, <http://www.littletechshoppe.com/ns1625/wraymenu.html> (last visited Mar. 27, 2006).

<sup>4</sup> MINES, QUARRIES, PITS, BOGS, MILLS AND CONCENTRATORS IN CANADA – GOLD, NATURAL RESOURCES CANADA, [http://mmsd1.mms.nrcan.gc.ca/mmsd/producers/commodityCompany\\_e.asp?nId=11](http://mmsd1.mms.nrcan.gc.ca/mmsd/producers/commodityCompany_e.asp?nId=11) (last visited Mar. 27, 2006).

<sup>5</sup> *Id.*

<sup>6</sup> Bruce Johnstone, *Safe Haven: Tour of Refuge Stations at Esterhazy Mine Illuminating*, STAR PHOENIX (SASKATOON), Feb. 17, 2006, at C11.

<sup>7</sup> R.S.C. c. A-6 (1985), as amended.

conditions established by this body. This law requires mine operators to permit inspections and to submit all plans to the Commission for approval. Approval must also be obtained to operate machinery for which no standards established by the Canadian Standards Association exist. The law requires employees to be searched for alcohol, drugs, and dangerous items.

On the provincial level, the regulation of coal mining recently has undergone considerable transformation. For many years, most of the provinces had laws that were aimed specifically at that industry. For example, Nova Scotia had the Coal Mines Regulation Act.<sup>8</sup> However, in recent years, the trend has been to repeal those specific laws and regulate coal mining through the general provisions of the occupational health and safety acts and the general mine safety regulations passed under the authority of those acts. For example, the province of Nova Scotia enacted new Underground Mining Regulations<sup>9</sup> under the authority of its Occupational Health and Safety Act<sup>10</sup> in 2003. These Regulations consist of 468 sections, many of which are very detailed and specifically address coal mining. The Regulations do not contain special rules for other types of underground mining. Thus, even though it is now regulated through general mining provisions, coal mining is still a special category. Incorporated in the many rules and standards respecting coal mining are those developed by the Mine Safety and Health Administration of the United States Department of Labor; however Nova Scotia's Regulations also contain rules recommended by the inquiry that followed the Westray mine disaster, as well as other requirements established by the provincial legislature. For example, the Regulations make the Director responsible for the actions of mines authorities. He must require that employers who propose to develop or construct a coalmine have their business plan and feasibility study assessed by a financial expert.<sup>11</sup> This provision responds to the committee of inquiry's finding that the Westray project probably was not viable economically, which may have contributed to the mine operators' failure to meet certain safety standards. The regulations also require that employers ensure that a mine examiner tests the air underground within fifty centimeters of the roof of a mine for the layering of flammable gas at the primary airway, return airways, accessible returns, sealed areas, working faces, and any additional required locations at least every seven days.<sup>12</sup> Responding to employee complaints, the provincial government also included provisions allowing employees to request inspections for flammable gas by competent persons at their own expense. However, employees must first consult with a joint safety committee that must be established at every mine before such a test is conducted.

The emergency preparedness provisions of the Underground Mining Regulations require employers to construct, inspect, and maintain a refuge station every three hundred meters underground in an active working mine if a miner has to travel more than five hundred meters to reach the surface or a shaft station.<sup>13</sup> Refuge stations must be built so that they can be sealed to prevent the entry of gases. Coal can be used as a seal if it is protected by a noncombustible barrier. Refuge stations must be located at least one hundred meters from a magazine or fueling station and near an intake, if possible. Refuge stations must have an air supply that is adequate to sustain the maximum number of workers

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<sup>8</sup> R.S.N.S. c. 73 (1989).

<sup>9</sup> 2003 N.S. Reg. No. 153.

<sup>10</sup> 1996 N.S.S. c.7.

<sup>11</sup> *Id.* § 48.

<sup>12</sup> *Id.* § 120

<sup>13</sup> *Id.* § 146.

intended to be sheltered there for a minimum of eight hours, by either ensuring that the room is large enough to contain the required air supply or it is equipped with compressed oxygen or air. Oxygen and flammable gas detectors, manometers, potable water, adequate means of voice communication, emergency lighting, stretchers, blankets, and razors are all required. Refuge stations cannot be used for other purposes, such as a lunchroom, and they must be inspected monthly.<sup>14</sup> During these monthly inspections, items that are perishable must be replaced.

Under Nova Scotia's Underground Mining Regulations, miners must be issued self-rescuers that provide protection against dust and that have a capacity of at least sixty minutes at one percent by volume of carbon monoxide in the air. This rule would appear to conform to U.S. standards. If a person might travel to a point that is more than thirty minutes by foot from the surface or a refuge station, the self-rescuer must be capable of protecting a person for a least twice the time it would take a normal person to reach the surface or a refuge station.

Nova Scotia has very detailed reporting requirements respecting "occurrences." For example, "an outbreak of fire, of any size, if it is unplanned or uncontrolled, or endangers a person or property" must be reported.<sup>15</sup> The province also gives mine inspectors broad powers, including powers to conduct unscheduled inspections that were expanded after the Westray disaster. This power to conduct unscheduled inspections was another recommendation of the public inquiry that investigated the Westray tragedy.

Nova Scotia's general mining regulations contain many provisions aimed specifically at coal mining. For example, there are provisions respecting advancing within three hundred meters of a body of water at a coalmine and advancing towards a geological fault in a coalmine. Rules respecting the inspection of coalmines also are detailed. For example, mine examiners must inspect working faces within four hours of the beginning of every shift and at least every eight hours after that time.<sup>16</sup>

Hot work in a coalmine is another area that is subject to detailed regulations. Supervisors are required to give employees written instructions on the use of hot work equipment. Wetting down is required within twenty feet of hot work. Hot work sites also must be dusted before work commences. Work must be halted if the amount of flammable gas reaches or exceeds 0.5 percent by volume in the air tested. Hot work equipment cannot be left unattended.<sup>17</sup>

The Underground Mining Regulations also contain rules for the qualification of coalmine workers, managers, immediate supervisors, first-line supervisors, examiners, surveyors, engineers, electricians, and mechanics. For example, no person is allowed to be an underground manager at a coalmine unless that person has completed grade twelve, holds a certificate in advanced first aid, has received a formal education in mining subjects acceptable to the Director, has five years experience,

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<sup>14</sup> *Id.* § 153.

<sup>15</sup> *Id.* § 27

<sup>16</sup> *Id.* § 117.

<sup>17</sup> *Id.* § 161.

and has satisfactory knowledge of the applicable laws.<sup>18</sup> First-line supervisors must have completed satisfactorily a course of study in mining subjects.<sup>19</sup>

Nova Scotia's Underground Mining Regulations are relatively advanced. Alberta's Occupational Health and Safety Code, which has replaced the Mines Safety Regulation<sup>20</sup> is, by contrast, far less detailed even though that province is the site of one active underground coalmine and many other types of mines. Two examples demonstrate this point. First, rather than establishing minimal standards for self-rescuers for miners that depend upon the proximity of their work site to an exit, the Occupational Health and Safety Code simply requires miners to be issued self-rescuers approved by the Director of Occupational Health and Safety.<sup>21</sup> Second, rather than establishing minimal air requirements for refuge stations, the Occupational Health and Safety Code simply requires refuge stations to be large enough to accommodate all miners working in the vicinity during one shift. The Code states refuge stations must have "air, water and a system that communicates effectively with the surface."<sup>22</sup> Alberta's refuge stations doors requirements are, however, more specific than those of Nova Scotia. The former's Code states that refuge stations must have "closable fireproof doors arranged that are equipped to prevent gases from entering the station."<sup>23</sup>

While Alberta's mine safety regulations are less detailed than those of Nova Scotia, they also give authorities responsibility for administering the Code's broad powers. As a result, before the plan for a mine is approved, they can require the building of refuge stations meet standards not mandated by the Code. The Director also can require self-rescuers to meet the highest industry standards. Thus, it appears that Alberta approaches mine safety on more of a case-by-case basis than Nova Scotia.

One interesting feature of Alberta's Code is that it requires mine operators to submit annual plans for review and approval. In addition to detailing the work that is proposed, the annual report must contain a ventilation plan.

The federal government of Canada does not have available statistics on underground mine fatalities or coalmine fatalities.<sup>24</sup> Press reports of statistics obtained from provincial authorities indicate the numbers are far lower than they once were. Back in 1914, 189 miners were killed in a single coalmine disaster in Alberta. In British Columbia, there were twenty-eight fatalities in coalmines between 1978 and 1998.<sup>25</sup> For all its mines, Ontario had a total of five fatalities in 2000.<sup>26</sup> Saskatchewan had one fatality in 2003 and another in 2005.<sup>27</sup>

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<sup>18</sup> *Id.* § 461.

<sup>19</sup> *Id.* § 463.

<sup>20</sup> 1995 Alta. Reg. No. 295.

<sup>21</sup> Alberta, Occupational Health and Safety Code, § 692, <http://www3.gov.ab.ca/hre/whs/publications/pdf/OHSC-1.pdf>.

<sup>22</sup> *Id.* § 559.

<sup>23</sup> *Id.*

<sup>24</sup> This information was obtained from the Canadian Embassy in Washington, D.C. on March 24, 2006.

<sup>25</sup> Stephen Hume, *The Quinsam Inquest and B.C. history, Coal mining is a bloody business*, VANCOUVER SUN, Feb. 27, 1998, at A21.

<sup>26</sup> Donna Faye, *Experts discuss mine safety*, SUDBURY STAR, Apr. 20, 2001, at A6.

<sup>27</sup> Murray Lyons, *Roof Collapse Looked at in Mine Fatality*, STAR PHOENIX, Sept. 24, 2005, at A6.



### **III. Concluding Remarks**

In conclusion, both Nova Scotia and Alberta recently have updated their laws and regulations respecting coalmine safety through the enactment of occupational health and safety regulations that replaced earlier coalmine safety laws. In drafting these regulations, authorities were guided by federal practices, U.S. practices, the recommendations of committees of inquiry that investigated fatal accidents in mines, and special local circumstances or conditions.

In addition to its Mines Act and Mines Regulation, British Columbia has a Health, Safety and Reclamation Code for Mines In British Columbia. Publication of this Code, developed by the Ministry of Energy, Mines and Petroleum Resources has, been updated to 2003.<sup>28</sup> Part 3 of the Mines Code contains rules and standards respecting personal safety and emergency preparedness.<sup>29</sup>

Prepared by Stephen F. Clarke  
Senior Foreign Law Specialist  
March 2006

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<sup>28</sup> British Columbia, Health, Safety and Reclamation Code for Mines,  
<http://www.em.gov.bc.ca/Mining/Healsafe/mxready/mxcode01.htm#The%20Microsoft>.

<sup>29</sup> A copy of Part 3 is attached.

**LAW LIBRARY OF CONGRESS**  
**PEOPLE'S REPUBLIC OF CHINA**  
**MINE SAFETY LEGISLATION**

*Executive Summary*

*The increase in fatal coalmine accidents in the People's Republic of China (PRC) has drawn attention from domestic and international observers. The PRC government has intensified its efforts to correct this problem by shutting down a great number of mines, but still faces criticism from the West. In this report, the laws on mining safety will be discussed and information on recent fatal accidents will be provided.*

## **I. Introduction**

Over the past two decades, the People's Republic of China (PRC) has transferred from a state-planned economy into a socialist market economy. The PRC recently surpassed France, Italy, and the United Kingdom to become the world's fourth largest economy. The restructuring of the economy has contributed to a more than ten-fold increase in the Gross Domestic Product (GDP) since 1978.<sup>1</sup>

Along with the significant economic development, energy consumption has grown rapidly as well. While accounting for only four percent of the global GDP, the PRC accounted for twelve percent of the global consumption of energy resources, fifteen percent of its water, twenty-eight percent of its steel, twenty-five percent of its aluminum, and fifty percent of its cement in 2005. The Central Committee of the Chinese Communist Party in October 2005 approved the draft 11th Five-Year Plan (11th FYP) and the National People's Congress is expected to give the Plan final approval in March 2006. The 11th FYP stipulated that the industrial sector must cut its energy use by 20 percent.<sup>2</sup>

Coal supplies around seventy percent of China's energy needs. China is under pressure from other countries to improve the safety of its coalmines. One foreign news agency criticized the Chinese government on account of the fact that the number of people killed every year in China's mines remains a mystery.<sup>3</sup> Chinese officials say that some six thousand miners died in 2004, but non-government groups say the true figure is far higher. Three thousand deaths in the PRC's mines had been reported by December 1, 2005. The China Daily newspaper, a state-owned newspaper in the PRC, said that following the government's campaign to increase safety, nine thousand illegal coalmines have been closed and almost thirteen thousand dangerous ones have been suspended since September 2005.<sup>4</sup>

In response to such changes, the Ministry of Land and Resources (MLR) was established in March 1998 and was assigned to be in charge of the planning, administration, protection and rational

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<sup>1</sup> THE WORLD FACE BOOK, CENTRAL INTELLIGENCE AGENCY, CHINA, <http://www.cia.gov/cia/publications/factbook/geos/ch.html>.

<sup>2</sup> THE WORLD FACE BOOK, CENTRAL INTELLIGENCE AGENCY, CHINA, <http://www.cia.gov/cia/publications/factbook/geos/ch.html>.

<sup>3</sup> *China's Deadly Mining Industry*, BBC NEWS, <http://news.bbc.co.uk/1/hi/world/asia-pacific/32669.stm>.

<sup>4</sup> *China Mine Blast Officials Held*, BBC NEWS, <http://news.bbc.co.uk/2/hi/asia-pacific/4487124.stm>.

utilization of natural resources such as land, minerals, and marine resources.<sup>5</sup> The MLR is responsible for implementing the mining legislation.

## II. Mining Legislation

In accordance with Article 9 of PRC Constitution Law,<sup>6</sup> mineral resources and other natural resources belong to the state. Article 9 stipulates that the state is responsible to ensure the rational use of natural resources.

In addition to the general provisions in the PRC Constitution Law, the PRC Mineral Resources Law,<sup>7</sup> the PRC Law on Mines Safety,<sup>8</sup> the Implementation Regulations of the PRC Law of Mines Safety,<sup>9</sup> the PRC Law of Manufacture Safety,<sup>10</sup> and the PRC Emergency Plan for Manufacture Incidents and Disasters<sup>11</sup> cover safety in mines as well.

The PRC Mineral Resources Law (MRL) was promulgated in March 1986. Article 4 of MRL states the creation of state-owned mining companies is the primary focus of the state, while Article 35 of MRL states that collective mining companies and private mining companies also are encouraged. To establish either a state-owned, collective, or private mining company, the PRC government must first review and approve the company's plan concerning manufacture safety in accordance with Article 15 of MRL.

The PRC Law on Mines Safety (LMS) was promulgated on May 1, 1993 and the Implementation Regulations of the PRC Law of Mines Safety (IRLMS) were promulgated on October 30, 1996. Article 1 of the LMS clarifies that the LMS is formulated for the purpose of ensuring safe manufacturing in mines, preventing incidents, protecting the safety of mine workers, and promoting the mining industry. The State Council, the highest executive organ of state power, is authorized to supervise national control over the safety of mines in accordance with Article 4 of the LMS.

Article 9 of the LMS states that the following features in mining designs must comply with the safety rules and technological standards for the industry:

- (1) the ventilation system of the shaft, and quantity, quality and speed of underground air; slope angles of an opencast mine and the width and height of its steps;

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<sup>5</sup> The further responsibilities of the MLR can be found at the MLR's website: <http://www.mlr.gov.cn/pub/gtzyb/mlrenglish/index.htm>.

<sup>6</sup> The English version of the PRC Constitution Law is available online at <http://www.cecc.gov/pages/newLaws/constitutionENG.php>.

<sup>7</sup> The Chinese version of the PRC Mineral Resources Law is available online at [http://www.law-lib.com/law/law\\_view.asp?id=291](http://www.law-lib.com/law/law_view.asp?id=291).

<sup>8</sup> The Chinese version of the PRC Law on Mines Safety is available online at [http://www.gov.cn/banshi/2005-08/05/content\\_20702.htm](http://www.gov.cn/banshi/2005-08/05/content_20702.htm).

<sup>9</sup> The Chinese version of the Implementation Regulations of the PRC Law on Mines Safety is available online at [http://www.gov.cn/ziliao/flfg/2005-08/06/content\\_20929.htm](http://www.gov.cn/ziliao/flfg/2005-08/06/content_20929.htm).

<sup>10</sup> The Chinese version of the PRC Manufacture Safety Law is available online at [http://news.xinhuanet.com/zonghe/2002-10/28/content\\_610830.htm](http://news.xinhuanet.com/zonghe/2002-10/28/content_610830.htm).

<sup>11</sup> The Chinese version of the PRC Emergency Plan on Manufacture Incidents and Disasters is available online at [http://www.gov.cn/yjgl/2006-01/23/content\\_21262.htm](http://www.gov.cn/yjgl/2006-01/23/content_21262.htm).

- (2) electricity supply system;
- (3) hoisting and transportation systems;
- (4) water control and drainage systems and fire control and fire-extinguishing systems;
- (5) gas control system and dust control system;
- (6) other items concerning safety in mines.

Article 10 of the LMS states that each underground mine must have at least two walkable safety outlets and that the direct horizontal distance between such outlets must comply with the safety rules and technological standards for the mining industry. Article 17 of the LMS states that mining companies must conduct testing of poisonous and harmful substances at work sites and the percentage of oxygen in underground air to ensure that they meet safety requirements. Article 18 of the LMS states that mining companies must adopt preventive measures against the following potential dangers:

- (1) roof falling, slope sliding, and surface collapsing;
- (2) gas blast and coal dust explosion;
- (3) bumps, gas outburst and blowout;
- (4) fire and flood on surface and underground;
- (5) perils arising from demolition apparatus and demolition operations;
- (6) perils caused by dust, poisonous and harmful gases, radioactive and other harmful substances; and
- (7) other perils.

In the IRLMS, the safety requirements are further specified. Article 14 of the IRLMS states that the following equipment, materials, safeguard appliances, and safety detecting instruments, which are used in mines, must conform to the safety standards of the State or of the mining industry:

- (1) equipment for mining, supporting, loading, transporting, hoisting, ventilating, draining, gas emission, air-compressing, and lifting;
- (2) motors, transformers, distributing boxes, electrical switches, and electric control devices;
- (3) explosive equipment, communications equipment, miners' lamps, cables, steel ropes, support materials, and fireproof materials;
- (4) all detecting instruments and meters for safety and health;
- (5) protective appliances and rescue equipment such as self-rescuer, safety cap, anti-gas and dust mask; protective clothing and protective shoes; and
- (6) other equipment and materials with special safety requirements designated by the competent department concerned.

Article 16 of the IRLMS mandates that the concentration of toxic and hazardous substances in the air of mining sites shall not exceed the standards of the state or the mining industry. Mining enterprises shall make regular inspections pursuant to the methods prescribed by the State and must perform the following examinations:

- (1) a dust concentration examination in dust working sites at least twice per month;
- (2) a trinitrotoluene concentration examination in trinitrotoluene working sites at least once per month;
- (3) a radioactive substances concentration examination in radioactive matter working sites at least three times per month;
- (4) a toxic and hazardous substances concentration examination in other toxic and hazardous substances working sites at least once per month underground and at least once per season in the surface; and
- (5) a respiratory dust concentration examination at least once per season using the individual sample method.

Article 17 of the IRLMS stipulates that ceilings and walls of roads in mines must be managed pursuant to the operating instructions for mining underground. Supports shall be strengthened when mining over geologic fracture zones or other sites involving fractures of ceilings and walls.

The PRC Law of Manufacture Safety (Safety Law) covers safety at work within the PRC. Article 19 of the Safety Law states that mines, construction units, and units that manufacture, deal in, and warehouse dangerous articles must establish work safety control organs or assign full-time work safety controllers. However, there is no specific rules on routine mine inspection.

### III. Concluding Remarks

As the PRC's economy is expanding at a rapid pace, its energy industry also keeps growing. One PRC government official stated that mining safety has improved and the rate of accidents and deaths associated with mining decreased in 2005 for the first time in recent years. Some government officials assert that all these incidents were disclosed to the public and the public has comprehensive access to information on mining safety.<sup>12</sup> The West, however, criticizes the PRC government for establishing only some control over safety standards in large, state-owned coalmines, and virtually no control over small, private mines where, in fact, most of the fatal accidents occur.<sup>13</sup> The PRC government is facing a great challenge regarding its national standards for mining safety.<sup>14</sup>

Prepared by Rui Wei  
Contract Foreign Law Specialist  
March 2006

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<sup>12</sup> *China Working Safety Report: 2004*, SOHU NEWS <http://news.sohu.com/20050123/n224066493.shtml>.

<sup>13</sup> CONGRESSIONAL-EXECUTIVE COMMISSION ON CHINA, COAL MINE SAFETY IN CHINA: CAN THE ACCIDENT RATE BE REDUCED?, <http://www.cecc.gov/pages/roundtables/121004/index.php>.

<sup>14</sup> JOHN J. TKACIK, JR, THE HERITAGE FOUNDATION, TIME FOR WASHINGTON TO TAKE A REALISTIC LOOK AT CHINA POLICY (2003), available at <http://www.heritage.org/Research/AsiaandthePacific/bg1717.cfm>.

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## SOUTH AFRICA

## MINE SAFETY LEGISLATION

*Executive Summary*

*South Africa's mining accidents have decreased in recent years. In 1996, parliament passed the Mine Health and Safety Act No. 29 of 1996, a comprehensive act that regulates and assigns responsibilities to both employers and employees, while establishing a system of accountability by creating health and safety committees as well as an inspectorate for mines and safety. In accordance with regulations issued under the Act, employers are responsible specifically for providing early warning systems at all working places and ensuring underground ventilation control devices or appliances, as well as for providing respiratory protective equipment, in addition to self contained self-rescuers.*

**I. Introduction**

South Africa has been described as “one of the world’s and Africa’s most important mining countries in terms of the variety and quantity of minerals produced. It has the world’s largest reserves of chrome, gold, vanadium, manganese and PGM’s.”<sup>1</sup> The mining industry in South Africa has experienced numerous accidents over the years but seems to have reduced the number of accidents in recent years. This reduction may be attributed to the implementation of the Mine Health and Safety Act No. 29 of 1996,<sup>2</sup> as well as the Regulations issued under this Act.<sup>3</sup> The Act establishes a general system of accountability by providing for the responsibilities of employers and of employees, while creating a system of health and safety committees as well as a mine and safety inspectorate. The Minister of Minerals and Energy (Minister) is responsible for implementation of the Act. A Mine Health and Safety Council provides the Minister advice in areas under his responsibility.<sup>4</sup>

**II. Statistics of Mines’ Accidents**

It was reported that in 1997, the deaths in South African mines numbered 424, with a decrease to 372 in 1998, and 313 in 1999.<sup>5</sup> It was further reported that seven miners were killed in 2001 in the

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<sup>1</sup> Text quoted from the MBendi, Information for Africa website:  
<http://www.mbendi.co.za/indy/ming/af/sa/p0005.htm> (last visited Mar. 3, 2006).

<sup>2</sup> 1996 SA Health 29, available at [www.lexis.com](http://www.lexis.com) (last visited Mar. 2, 2006).

<sup>3</sup> Regulations Under the Mine Health and Safety Act No. 29 of 1996, Regulation Gazette No 569, Government Gazette (May 17, 2002), available at <http://www.info.gov.za/gazette/regulation/2002/23410.pdf>; and Regulations Under the Mine Health and Safety Act No. 29 of 1996, Regulation Gazette No. 7400, No. R. 904, 445 Government Gazette (July 2, 2002), available at <http://www.info.gov.za/gazette/regulation/2002/23583.pdf>.

<sup>4</sup> *Id.* ch. 4.

<sup>5</sup> *SA Miners Blame Bosses over Accident*, BBC News Online: Word: Africa (May 9, 2001), <http://news.bbc.co.uk/1/low/world/africa/1321394.stm>.

Beatrix mine near Welkom, 175 miles southwest of Johannesburg, and that nine miners died in 2004 from an accident at the Northam Platinum mine in South Africa's northern province of Limpopo.

### III. General Duties of Employers

The Mine Health and Safety Act No. 29 of 1996 (Act)<sup>6</sup> imposes on the employer of every mine the duties to:

- a) ensure, as far as reasonable practicable, that the mine is designed, constructed and equipped-
  - (i) ...provide conditions for safe operation and a healthy working environment; and
  - (ii) with a communication system and with electrical, mechanical and other equipment as necessary to achieve those conditions;
- b) ensure, as far as reasonably practicable, that the mine is commissioned, operated, maintained and decommissioned in such a way that employees can perform their work without endangering the health and safety of themselves or of any other person...<sup>7</sup>

The employer must prepare and implement a code of practice on any matter affecting the health or safety of employees and others at the mine, if the Chief Inspector of Mines<sup>8</sup> so requests. The employer is further under an obligation to provide the employees with health and safety training. The Act specifically requires that the employer ensure that every employee is trained properly in relevant emergency procedures.<sup>9</sup>

### IV. Specific Safety Standards

The employer of every coalmine or a mine exposing minors to irrespirable atmospheres is under an obligation to ensure that miners are provided with and use an individual body-worn, self-contained self-rescuer that complies with specifications defined by the South African Bureau of Standards.<sup>10</sup>

In addition, “[w]here the risk assessment of the mine indicates a significant risk of a fire and/or explosion and/or toxic release that could lead to an irrespirable atmosphere or an atmosphere immediately dangerous to life or health, the employer must provide an early warning system or systems at all working places.”<sup>11</sup> The employer must ensure that polymer underground ventilation control devices or appliances that have the potential for electrical static discharge comply with specific safety

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<sup>6</sup> 1996 SA Health 29, available at [www.lexis.com](http://www.lexis.com) (last visited Mar. 2, 2006).

<sup>7</sup> 1996 SA Health 29, §2.

<sup>8</sup> For information on the duties of the Chief Inspector of Mines *see* further in this report.

<sup>9</sup> 1996 SA Health 29, §10(d).

<sup>10</sup> Regulations Under the Mine Health and Safety Act No. 29 of 1996, schedule, ch. 16, Regulation Gazette No. 569, Government Gazette (May 17, 2002), available at <http://www.info.gov.za/gazette/regulation/2002/23410.pdf>.

<sup>11</sup> Regulations Under the Mine Health and Safety Act No. 29 of 1996, Regulation Gazette No. 7400, No. R. 904, Reg. 9.1(2) 445 Government Gazette (July 2, 2002), available at <http://www.info.gov.za/gazette/regulation/2002/23583.pdf>.

standards and are anti-static when used in working places where there is a risk of igniting gas, dust, or vapor.<sup>12</sup> The employer also is under an obligation to ensure the illumination of working places.<sup>13</sup>

## V. Health and Safety Representatives and Committees

The Act requires the appointment of a health and safety representative for each shift at each designated working place at every mine with twenty or more employees.<sup>14</sup> In addition, every mine with a hundred or more employees must have one or more health and safety committees.

Prior to the appointment of representatives, the employer must meet with the representative trade union of the mine and enter into negotiations to conclude a collective agreement. Health and safety committees must be established under the terms of that agreement.<sup>15</sup> A health and safety committee must consist of at least four employee representatives; moreover, the number of employer representatives should be equal to or less than the number of employee representatives. The committee has extended powers including the authority to request the investigation by an inspector of any accident or occurrence at a mine that results in death, serious injury, or failure to comply with the Act.<sup>16</sup>

## VI. Inspectorate of Mine Health and Safety

The Act establishes an Inspectorate of Mine Health and Safety (Inspectorate). It further authorizes the Minister to establish regions of the country for the purpose of administering the Act through regional offices of the Inspectorate. According to the Act, “[t]he Minister must appoint an officer, with suitable mining qualifications and appropriate experience in health and safety at mines, to be Chief Inspector of Mines.”<sup>17</sup>

Among his duties, the Chief Inspector of Mines must ensure compliance and enforcement of the Act; administer the Inspectorate; determine and implement policies to promote the health and safety at mines; publish and distribute a plan of action for the activities of the Inspectorate; and submit to the Minister annual reports on health and safety at mines and the activities of the Inspectorate. The Chief Inspector may authorize “a competent independent person to perform any or all the functions of an inspector.”<sup>18</sup>

Inspectors enjoy extended powers, including the power to enter any mine at any time without a warrant or notice, to question and require any person to produce documents, to recommend fines, et cetera.<sup>19</sup> The Act specifically provides:

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<sup>12</sup> *Id.* Reg. 9.1(3).

<sup>13</sup> *Id.* Reg. 9.1(9).

<sup>14</sup> 1996 SA Health 29, § 25 available at [www.lexis.com](http://www.lexis.com) (last visited Mar. 2, 2006).

<sup>15</sup> *Id.* § 34.

<sup>16</sup> *Id.* §§ 36, 60, 65.

<sup>17</sup> *Id.* § 47.

<sup>18</sup> *Id.* § 49 (4), (5).

<sup>19</sup> *Id.* § 50.



54. Inspector's power to deal with dangerous conditions.

- (1) If an inspector has reason to believe that any occurrence, practice or condition at a mine endangers or may endanger the health or safety of any person at the mine, the inspector may give any instruction necessary to protect the health or safety of persons at the mine, including but not limited to an instruction that-
  - (a) operations at the mine or a part of the mine be halted;
  - (b) the performance of any act or practice at the mine or a part of the mine be suspended or halted, and may place conditions on the performance of that act or practice;
  - (c) the employer must take the steps set out in the instruction, within the specified period, to rectify the occurrence, practice or condition; or
  - (d) all affected persons, other than those who are required to assist in taking steps referred to in paragraph (c), can be moved to safety.<sup>20</sup>

The Chief Inspector of Mines is obligated to instruct inspectors to investigate any accident or occurrence at a mine that results in the death of any person. Inspectors may investigate at any time any accidents that resulted in serious injury or illness, any health and safety conditions, or suspected failures to comply with any provision of the Act.

Prepared by Ruth Levush  
Senior Foreign Law Specialist  
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<sup>20</sup> *Id.* § 54.